I here certify that this correspondence is being deposited with the U.S. Postal Service with officient postage as First Class Mail, in an envelope addressed to: Commissioner Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

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Docket No.: 28341/6223.NDV1 (PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Dated: September 22, 2004

Lowery et al.

Application No.: 10/650,467

Filed: August 28, 2003 Art Unit: 1632

For: G Protein-Coupled Receptor-Like Receptors and Examiner: Not Yet Assigned

Modulators Thereof

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

Attached herewith are copies of Forms PTO-1449 (modified) and PTO-892 that were submitted by the Applicants and the Examiner in parent application, U.S. Patent Application No. 09/721,870, filed November 24, 2000, now issued U.S. Patent No. 6,632,621. These copies are hereby submitted by the Applicants for consideration in connection with the above-identified patent application in compliance with 37 C.F.R. §1.97 and the duty of disclosure under 37 C.F.R. §1.56.

The present application is a divisional of U.S.S.N. 09/721,870, which is relied on for an earlier effective filing date under 35 U.S.C. §120. Thus, in accordance with 37 C.F.R. §1.98(d)(1), copies of the references cited on Forms PTO-1449 (modified) and PTO-892 are not attached herewith and the Examiner is referred to the file for U.S.S.N. 09/721,870 for such copies. However, should the Examiner require copies of one or more of the references cited in the prior application, the Applicants will furnish the documents upon request.

Application No.: 10/650,467 Docket No.: 28341/6223.NDV1

This information disclosure statement is not intended to be an admission that a search has been made, that other relevant art does not exist, or that any of the information disclosed herein constitutes prior art under 35 U.S.C. §102 or 35 U.S.C. §103.

This statement and Forms PTO-1449 (modified) and PTO-892 are being submitted before receipt of a first Office Action in the above-identified patent application. Accordingly, it is believed that no fee is due in this matter under 37 C.F.R. §1.97(b). However, if it is determined that any appropriate fee is due, please charge Deposit Account Number 13-2855. A duplicate of this paper is enclosed.

Dated: September 22, 2004

Respectfully submitted,

Lynn I. Janulis, Ph.D.

Registration No.: 53,066 Agent for Applicants

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FOREIGN PATENT DOCUMENTS								
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*Examiner Initials	i	Document Number	Publication Date	Country	Class	Subclass	Yes	No
risin	B1	WO 97/09433	3/13/97	PCT				
usil	B2	WO 97/48976	12/24/97	PCT				

	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)				
mary	C1	Altschul, et al., "Gapped BLAST and PSI-BLAST: A New Generation of Protein Database Search Programs," Nucl. Acids Res. 25:3389-3402 (1997).			
Mari	C2	Aujame, et al., "High-Affinity Human Antibodies by Phage Display," Human Antibodies 8:155-168 (1997).			
Maril	СЗ	Baindur, et al., "Selective Fluorescent Ligands for Pharmacological Receptors," Drug Dev. Res. 33:373-398 (1994).			
Jusin	C4	Bargmann, C., "Neurobiology of the Caenorhabditis elegans Genome," Science 282:2028-2032 (1998).			

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Form PTO-1449 (Modified) JAN 1 8 2002 U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 28341/6223.N	Serial No. 09/721,870
INFORMATION DISCLOSURE STATEMENT	Applicant Lowery et al.	
(Use several sheets if necessary)	Filing Date November 24, 2000	Ploup 163 D

		<u> </u>
		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)
MAN	C5	Birgul, et al., "Reverse physiology in Drosophila: Identification of a No Allatostatin-like Neuropeptide and its Cognate Receptor Structurally Receptor to the Mammalian Somatostatin/galanin/opioid Receptor Family," EMBO Journal 18:5892-5900 (1999).
Mary	C6	Bohm, et al., "Regulatory Mechanisms That Modulate Signalling by G-protein-coupled Receptors," Biochemistry Journal 322:1-18 (1997).
man	C7	Bosse, et al., "Development of Nonseparation Binding and Functional Assays for G Protein-Coupled Receptors for High Throughput Screening: Pharmacological Characterization of the Immobilized CCR5 Receptor on FlashPlate®," J. Biomol. Screening 3:285-292 (1998).
man	C8	Boulton, et al., "ERKs: A Family of Protein-Serine/Threonine Kinases That Are Activated and Tyrosine Phosphorylated in Response to Insulin and NGF," Cell 65:663-675 (1991).
Man	С9	Bruggemann, et al., "Production of Human Antibody Repertoires in Transgenic Mice," Current Opinions in Biotechnology 8:455-458 (1997).
MANY	C10	Bruggemann, et al., "Strategies for Expressing Human Antibody Repertoires in Transgenic Mice," Immunol. Today 17:391-397 (1996).
man	C11	Cane, et al., "Harnessing the Biosynthetic Code Combinations, Permutations, and Mutations," Science 282:63-68 (1998).
Mary	C12	Cobbold, et al., "AEQUORIN MEASUREMENTS OF CYTOPLASMIC FREE CALCIUM," in CELLULAR CALCIUM: A PRACTICAL APPROACH, (McCormack, et al., eds. Oxford, IRL Press 1991).
MA	C13	Cox, et al., "Cloning Characterization, and Expression of a G-Protein-Coupled Receptor from Lymnaea stagnalis and Identification of a Leucokinin-Like Peptide, PSFHSWSamide, as Its Endogenous Ligand," J. Neurosci. 17:1197-1205 (1997).
May	C14	Day, et al., "Parasitic Peptides! The Structure and Function of Neuropeptides in Parasitic Worms," Peptides 20:999-1019 (1999).

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INFORMATION DISCLOSURE STATEMENT	Applicant Lowery et al.	
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	2) <u>H</u>

	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pees, etc.)
C15	de Bono, et al., "Natural Variation in a Neuropeptide Y Receptor Homolog Modifies Social Behavior and Food Response in C. elegans," Cell 94:679-689 (1998).
W C16	Dooley, et al., Binding and In Vitro Activities of Peptides with High Affinity for the Nociceptin/Orphanin FQ Receptor, ORL1," J. Pharm. & Exp. Therap. 283:735-741 (1997).
M C17	Dunlop, et al., Characterization of 5-HT _{1A} Receptor Functional Coupling in Cells Expressing the Human 5-HT _{1A} Receptor as Assessed with the Cytosensor Microphysiometer," J. of Pharmacol. and Toxicol. Methods 40:47-55 (1998).
C18	Fields, et al., "A Novel Genetic System to Detect Protein-protein Interactions," Nature 340:245-246 (1989).
wm C19	Fields, et al., "The Two-hybrid System: an Assay for Protein-protein Interactions," Trends in Genetics 10:286-292 (1994).
M C20	Frandsen, et al., "A Simple Ultrasensitive Method for the Assay of Cyclic AMP and Cyclic GMP in Tissues," Life Sciences 18:529-541 (1976).
MM C21	Geary, et al., "Pharmacology of FMRFamide-Related Peptides in Helminths," Annals N. Y. Acad. Sci. 897:212-227 (1999).
₩ C22	Geary, et al., "The Pharmacology of FMRFamide-related Neuropeptides in Nematodes: New Opportunities for Rational Anthelmintic Discovery?," International Journal of Parasitology 25:1273-1280 (1995).
MA C23	George, et al., "Evaluation of a CRE-Directed Luciferase Reporter Gene Assay as an Alternative to Measuring cAMP Accumulation," J. Biomol. Screening 2:235-240 (1997).
WS C24	Gerhardt, et al., "Functional Characteristics of Heterologously Expressed 5-HT Receptors," Eur. J. Pharmacol. 334:1-23 (1997).
μ4 C25	Guerrero, "Cloning of a cDNA from Stable Fly which Encodes a Protein with Homology to a <i>Drosophila</i> Receptor for Tachykinin-like Peptides," F.D., <i>Annals N.Y. Acad. Sci.</i> 814:310-311 (1997).

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		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)
men	C26	Hill, "Trends in Development of High-throughput Screening Technologies for Rapid Discovery of Novel Drugs," Curr. Opin. In Drug Disc. & Dev. 1:92-97 (1998).
1 1 M	C27	Hodgson, "Receptor Screening and the Search for New Pharmaceuticals," Bio/Technology 10:973-980 (1992).
m	\C28	Holmes, et al., "Cloning and Transcriptional Expression of a Leucokinin-like Peptide Receptor from the Southern Cattle Tick, Boophilus microplus (Acari: Ixodidae)," Insect Mol. Biol. (2000 in press).
man	C29	Hoogenboom, "Designing and Optimizing Library Selection Strategies for Generating High-affinity Antibodies," <i>TIBTECH</i> 15:62-70 (1997).
men	C30	Jaquette, et al., "Temperature Sensitivity of Some Mutants of Lutropin/Choriogonadotropin Receptor," Endocrinology 138:85-91 (1997).
May	C31	Jayawickreme, et al., "Gene Expression Systems in the Development of High-throughput Screens," Current Opinion in Biotechnology 8:629-634 (1997).
mar	C32	Kanterman, et al., "Transfected D ₂ Dopamine Receptors Mediate the Potentiation of Arachidonic Acid Release in Chinese Hamster Ovary Cells," Molecular Pharmacology 39:364-369 (1991).
man	C33	Kowal, et al., "A [35S]GTPγS Binding Assessment of Metabotropic Glutamate Receptor Standards in Chinese Hamster Ovary Cell Lines Expressing the Human Metabotropic Receptor Subtypes 2 and 4," Neuropharmacology 37:179-187 (1998).
MM	C34	Kozak, et al., "An Analysis of 5'-noncoding Sequences from 699 Vertebrate Messenger RNAs, " Nucl. Acids Res. 15:8125-8148 (1987).
M	C35	Kuntzweiler, et al., "Rapid Assessment of Ligand Actions with Nicotinic Acetylcholine Receptors Using Calcium Dynamics and FLIPR," Drug Development Research 44:14-20 (1998).
my	C36	Lajiness, et al., "D2 Dopamine Receptor Stimulation of Mitogenesis in Transfected Chinese Hamster Ovary Cells: Relationship to Dopamine Stimulation of Tyrosine Phosphorylations," Journal of Pharmacology and Experimental Therapeutics 267:1573-1581 (1993).

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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Form PTO-1449 (Modified) JAN 1 & 2002 U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 28341/6223.N	Serial No. 09/721,870
INFORMATION DISCLOSURE STATEMENT	Applicant Lowery et al.	
(Use several sheets if necessary)	Filing Date November 24, 2000	Group 143/ Waknown

	<u> </u>
	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages etc.)
C37	Lenz, et al., "Molecular Cloning and Genomic Organization of a Novel Ecceptor from Drosophila melanogaster Structurally Related to Mammalian Galanin Reseptors," Biochem. Biophys. Res. Comm. 269:91-96 (2000).
W C38	Li, et al., "Neuropeptide Gene Families in the Nematode Caenorhabditis elegans," Annals N. Y. Acad. Sci. 897:239-252 (1999).
14 C39	Li, et al., "Cloning, Functional Expression, and Developmental Regulation of a Neuropeptide Y Receptor from <i>Drosophila melanogaster</i> ," J. Biol. Chem. 267:9-12 (1992).
pp C40	Myers, P.L., "Will Combinatorial Chemistry Deliver Real Medicines?," Current Opinion in Biotechnology 8:701-707 (1997).
C41	Nakayama, et al., "Microplate Assays for High-Throughput Screening," Drug Disc. & Dev. 1:85-91 (1998).
W C42	Pausch, M.H., "G-protein-coupled Receptors in Saccharomyces cerevisiae: High-throughput Screening Assays for Drug Discovery," Trends in Biotech. 15:487-494 (1997).
C43	Radar, et al., "Phage Display of Combinatorial Antibody Libraries," Current Opinions in Biotechnology 8:503-508 (1997).
MA C44	Rogers, "Light on High-throughput Screening: Fluorescence-based Assay Technologies," <i>Drug Disc. Today</i> 2:156-160 (1997).
pr\$ C45	Schroeder, et al., "FLIPR: A New Instrument for Accurate, High Throughput Optical Screening," J. Biomol. Screening 1:75-80 (1996).
M C46	Seifert, et al., "Reconstitution of β_2 -adrenoceptor-GTP-binding-protein Interaction in Sf9 Cells High Coupling Efficiency in a B ₂ -adrenoceptor-G _{sa} Fusion Protein," Eur. J. Biochem. 255:369-382 (1998).
MM C47	Stables, et al., "A Bioluminescent Assay for Agonist Activity at Potentially Any G-Protein-Coupled Receptor," Analytical Biochemistry 252:115-126 (1997).
, US C48	Stratowa, et al., "Use of a Luciferase Reporter System for Characterizing G-protein-linked Receptors," Current Opinion in Biotechnology 6:574-581 (1995).

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Form PTO-1449 (Modified) JAN 1 8 2002	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 28341/6223.N	Serial No. 09/721,870
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		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Page etc. 2
m	C49	Strosberg, et al., "Functional Expression of Receptors in Microorganisms Trends Pharm. Science 13:95-98 (1992).
man	C50	Strosberg, "Structure/function Relationship of Proteins Belonging to the Family of Receptors Coupled to GTP-binding Proteins," <i>Eur. Journal of Biochemistry</i> 196 :1-10 (1991).
man'	C51	Sutherlands, et al., "Some Aspects of the Biological Role of Adenosine 3',5'-monophosphate, (Cyclic AMP)," Circulation 37:279 (1968).
M	C52	Sweetnam, et al., "The Role of Receptor Binding in Drug D," J. Nat. Prod. 56:441-455 (1993).
man	C53	Tensen, et al., "The Lymnaea Cardioexcitatory Peptide (LyCEP) Receptor: A G-Protein-Coupled Receptor for a Novel Member of the RFamide Neuropeptide Family," J. Neurosci. 18:9812-9821 (1998).
man	C54	Thompson, et al., "CLUSTAL W: Improving the Sensitivity of Progressive Multiple Sequence Alignment Through Sequence Weighting, Position-specific Gap Penalties and Weight Matrix Choice," Nucl. Acids Res. 22:4673-4680 (1994).
	C55	Thompson, et al., "Prospects for Rational Approaches to Anthelmintic Discovery," Parasitology 113:S217-S238 (1996).
MA	C56	Vanden Broeck, "G-Protein-Coupled Receptors in Insect Cells," <i>Intl. Rev. Cytol.</i> 164 :189-268 (1996).
Mary	C57	Wieboldt, et al., "Immunoaffinity Ultrafiltration with Ion Spray HPLC/MS for Screening Small-Molecule Libraries," Anal. Chem. 69:1683-1691 (1997)
W	C58	Williams, "Receptor Binding in the Drug Discovery Process," <i>Med. Res. Review</i> 11:147-184 (1991).
M	C59	Wilson, et al., "Orphan G-protein-coupled Receptors: The Next Generation of Drug Targets?," Brit. Journal Pharmacol. 125:1387-1392 (1998).
MA	C60	PCT/US/00/32225, International Search Report Dated August 28, 2001.

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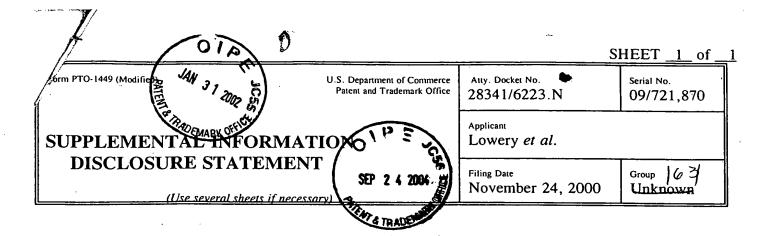
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	OTHER DOCUMENTS (Including A	uthor, Title, Date, Pertinent Pa	etc.)
C61	Cox, et al., "Cloning, Characterization, and Receptor from Lymnaea stagnalis and Identify PSHFHSWSamide, as Its Endogenous Ligano	ication of a Leucokinin-l	Like Protein,
MO C62	Lee, et al., "Cloning and Expression of a G P		oline Receptor

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10/18/02



		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)		
mam	Murphy, et al., "From DNA to Drugs: The Orphan G-protein Coupled Receptors," Cur. Opin. in Drug Disc. Dev. 1:192-199 (1998).			
My	C64	Probst, et al., "Sequence Alignment of the G-Protein Coupled Receptors Superfamily," DNA Cell Biol. 11:1-20 (1992).		

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Examiner

Marjorie A. Moran

Applicant(s)/Patent Under
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U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

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NON-PATENT DOCUMENTS

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